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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,072	01/18/2006	Friedrich Boecking	R.305590	3667

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EXAMINER	
FRISTOE JR, JOHN K	

ART UNIT	PAPER NUMBER
3753	

MAIL DATE	DELIVERY MODE
04/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,072	BOECKING, FRIEDRICH	
	Examiner	Art Unit	
	JOHN K. FRISTOE JR	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/18/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 1/18/2006 is acknowledged by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13, 14, 17, 20-22, 24, and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,858,439 (Sawada et al.). Sawada et al. disclose a hydraulic coupler for a fuel injector valve comprising a booster piston (6), a piezoelectric actuator (23), an additional booster piston (1), a nozzle needle (24), a lifetime filling of a hydraulic fluid (col. 3, lines 17-18), one end of the booster piston (6) guided within the additional booster piston (1), a booster chamber (10), an additional enclosure (13) comprising an annular chamber, a spring sealing element (11) or a convoluted bellows that is deformable in a radial direction, a connecting conduit (surrounding piston (8), a through hole (surrounding element 8)a sealing element (12), a stationary housing part (housing surrounding element 4 in figure 8), and an injector valve (8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 15, 16, 18, 19, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,858,439 (Sawada et al.) in view of U.S. Pat. No. 6,581,900 (Stoecklein). Sawada et al. disclose a hydraulic coupler for a fuel injector valve comprising a booster piston (6), a piezoelectric actuator (23), an additional booster piston (1), a nozzle needle (24), a lifetime filling of a hydraulic fluid (col. 3, lines 17-18), one end of the booster piston (6) guided within the additional booster piston (1), a booster chamber (10), an additional enclosure (13) comprising an annular chamber, a spring sealing element (11) or a convoluted bellows that is deformable in a radial direction, a connecting conduit (surrounding piston (8), a through hole (surrounding element 8)a sealing element (12), a stationary housing part (housing surrounding element 4 in figure 8), and an injector valve (8) but lacks a rounded throttle. Stoecklein teaches a valve structure having a rounded throttle (30) in a conduit (19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic coupler of Sawada et al. by adding a throttle to the conduit as taught by Stoecklein in order to decrease the speed of the fluid as it travels through the conduit and limit the speed of the pistons.

6. Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,858,439 (Sawada et al.) in view of U.S. Pat. No. 7,066,399 (Hohl). Sawada et al. disclose a hydraulic coupler for a fuel injector valve comprising a booster piston (6), a piezoelectric actuator (23), an additional booster piston (1), a nozzle needle (24), a lifetime filling of a hydraulic fluid (col. 3, lines 17-18), one end of the booster piston (6) guided within the additional booster piston (1), a booster chamber (10), an additional enclosure (13) comprising an annular chamber, a spring sealing element (11) or a convoluted bellows that is deformable in a

radial direction, a connecting conduit (surrounding piston (8), a through hole (surrounding element 8)a sealing element (12), a stationary housing part (housing surrounding element 4 in figure 8), and an injector valve (8) but lacks a spring between the piston and the stationary housing part. Hohl teaches a spring (54) between a piston (42, 40) and a stationary housing part (51, 55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hydraulic coupler of Sawada et al. by adding a spring between the piston and the stationary housing part as taught by Hohl in order to bias the piston in the opposite direction of the actuator.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 7,051,991 (Suzuki) disclose a hydraulic coupler.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926. The examiner can normally be reached on Monday-Friday, 7: 00 a.m-4: 30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Huson can be reached on (571) 272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John K. Fristoe Jr./
John K. Fristoe Jr.
Examiner
Art Unit 3753

JKF